

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A method for providing remote engineering for an industrial environment, said industrial environment having a plurality of production devices each with at least one digital control unit connected thereto and employing one or more of a diverse plurality of communication protocols to provide a discreet communication channel providing input of instructions and output of data for each production device, comprising the steps of:

translating the output of said digital control units into a plurality of discrete data streams having a common communication protocol;

reversibly encoding said plurality of discrete data streams into a first single data stream using said common communication protocol;

transmitting said first single data stream to a remote network;

decoding said first single data stream at the remote network into said discrete data streams, wherein each said discrete data stream is in a format particular to an individual production device;

identifying by analysis of said data at the remote network at least one target production device of said plurality of production devices to receive instructions for remote engineering;

formulating a plurality of instructions responsive to said analysis and arranged as a discrete remote engineering instruction set corresponding to each of said at least one target production device, each of said discrete remote engineering instruction sets comprising configurational and operational data relating to a corresponding one of said at least one target production device;

reversibly encoding said remote engineering instruction sets into a second single data stream using said common communication protocol;

transmitting said second single data stream to said industrial environment;

decoding said second single data stream at the local network into said discrete remote engineering instruction set;

translating said remote engineering instruction set into at least one of said diverse communication protocols executable by the digital control unit connected to each of said at least one target production unit; and

delivering said ~~instructions~~ remote engineering instruction set over the local network to the target production unit.

2. (original) The method of Claim 1 wherein said first single data stream and said second single data stream are transmitted across a single bidirectional communication line.

3. (currently amended) A method for providing remote telemetry for an industrial environment having a plurality of production devices with digital control units employing one or more of a diverse plurality of communication protocols to provide a discrete data streams comprising the steps of:

translating the output of said digital control units into a plurality of discrete data streams having a common communication protocol;

reversibly encoding said plurality of discrete data streams into a single data stream using said common communication protocol;

transmitting said data stream over an open network to a remote network in real time;

decoding said single data stream into said discrete data streams at said remote network, wherein each said discrete data stream is in a format particular to an individual production device.

identifying by analysis of said data at the remote network at least one target production device of said plurality of production devices to receive instructions for remote engineering; and

formulating a plurality of instructions responsive to said analysis and arranged as a discrete remote engineering instruction set corresponding to each of said at least one target production device, each of said discrete remote engineering instruction sets comprising configurational and operational data relating to a corresponding one of said at least one target production device;

4. (original) In production environment having a plurality of production devices with digital control units connected by at least one interface thereto and employing one or more of a diverse plurality of communication protocols to provide a discrete data stream, a system for providing process engineering from a remote data network comprising:

an open network connected to said remote data network and enabling data communication therebetween;

at least one translator connected to each of said plurality of control units to allow conversion of data between said diverse plurality of communication protocols and a common communication protocol;

a data network local to said production environment and using said common communication protocol for connecting said at least one translator to said open network and allowing data communication therethrough with said remote data network;

an encoder at said local network that reversibly encodes said plurality of discrete data streams into a single data stream using said common communication protocol;

a decoder at said remote network that decodes said single data stream into said plurality of discrete data streams, wherein each said discrete data stream is in a format particular to an individual production device; and

a remote network that identifies by analysis of said data at the remote network at least one target production device of said plurality of production devices to receive

instructions for remote engineering and that formulates a plurality of instructions responsive to said analysis and arranged as a discrete remote engineering instruction set corresponding to each of said at least one target production device, each of said discrete remote engineering instruction sets comprising configurational and operational data relating to a corresponding one of said at least one target production device.